## Exhibit VV

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SUPREME COURT OF THE STATE OF NEW YORK NEW YORK COUNTY

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THE CITY OF NEW YORK,

Plaintiff,

v.

ENVIROMD GROUP LLC; GT IMPORTS; KAYLA WHOLESALE, INC., d/b/a The Vapery; KLCC WHOLESALE INC.; MV TRADING LLC a/k/a MYVAPORSTORE; PIONEER DISTRIBUTION, INC. a/k/a WEVAPEUSA.COM a/k/a SELLER SUPREME LLC; RZ SMOKE INC.; STAR ZONE INC.; URBAN SMOKE DISTRIBUTORS; VAPE MORE INC. a/k/a MORE LLC; VAPE PLUS DISTRIBUTION CORP. a/k/a G&A DISTRIBUTION,

AFFIRMATION OF MICHELLE MORSE, M.D. IN SUPPORT OF PLAINTIFF'S MOTION FOR A PRELIMINARY INJUNCTION

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Defendants.

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X

I, **MICHELLE E. MORSE, M.D.,** hereby affirm, pursuant to Rule 2106 of the New York Civil Practice Law and Rules (hereinafter "CPLR"), under the penalties of perjury of the laws of New York, which may include a fine or imprisonment, that the following is true, and I understand that this document may be filed in an action or proceeding in a court of law:

- 1. I am the Chief Medical Officer and First Deputy Commissioner fat the NYC Department of Health and Mental Hygiene ("DOHMH"). I make this declaration in support of the City's motion for a preliminary injunction.
- 2. I am an internal medicine and public health physician, a part-time hospitalist at Kings County Hospital, and an Assistant Professor at Harvard Medical School. I was an internal medicine hospitalist at Brigham and Women's Hospital (BWH) in the Division of Global Health

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Equity from 2012 through 2021, and I served as Assistant Program Director for the Internal Medicine Residency at Brigham and Women's Hospital from 2016 through 2019.

- 3. DOHMH is the City agency charged broadly with protecting and promoting the health of all New Yorkers. The Department has a long history of public health research into environmental conditions that affect the health and safety of the City's residents, and an equally long history of promoting legislation and implementing measures that prevent or reduce threats to public health, especially in the area of tobacco control.
- 4. DOHMH was instrumental in the enactment of provisions in the New York City Administrative Code that prohibit the sale and possession for sale within the City of "e-cigarettes" and "e-liquids" that use flavored solutions to produce nicotine aerosols or mists that are inhaled by the user or "vaper." DOHMH did so on the basis of an extensive scientific literature establishing that nicotine use and dependence can have significant, harmful effects on the developing adolescent brain. Further, inhalation of other known and unknown constituents contained in e-cigarettes or e-cigarette solutions ("e-liquids") creates additional risks, which will take years to fully understand.
- 5. Nicotine can change the chemistry of the adolescent brain. It may affect learning ability and worsen memory and concentration. Youth are particularly vulnerable to nicotine dependence, which can occur even with non-daily, occasional use. Nicotine withdrawal symptoms include anxiety, irritability and depressed mood, so nicotine dependence may compound stress and mental health symptoms. Nicotine may also affect the way the adolescent brain processes other drugs, such as alcohol, cannabis and cocaine. While the proportion of youth who smoke cigarettes has continued to decline since 1997, e-cigarette use means more youth now use products that can negatively affect the health of their lungs and create dependence on nicotine than in 2001.

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Further, youth who use e-cigarettes are more likely to try cigarettes, which similarly contain nicotine and also remain a leading cause of death in NYC and globally. 6,7,8 Treatment options for nicotine dependence among youth are also more limited, as studies for various types of pharmacotherapy and related FDA medication approvals have previously focused on adults. 9,10

Although "e-cigarettes" are often discussed as if they are a single product, this category includes thousands of different products, which deliver nicotine at varying concentrations, rates, volumes, and with many other chemicals. Nicotine delivery depends on eliquid nicotine content, how people use the device, as well as device characteristics and voltage, which can affect droplet size in the generated aerosol. 11,12,13,14 The amount of nicotine in ecigarettes is often not labelled clearly or in an easily understandable way. 15 Between 2017 and 2022, the average nicotine levels of e-cigarettes sold in the United States more than doubled, rising from 2.5% to 4.4%. 16 As a result, the nicotine levels are double or more what is permitted throughout Europe, 17 the United Kingdom, 18 and Canada. 19 Nicotine concentrations tend to be even higher in disposable products; over 90% of disposable e-cigarettes sold from 2017 to 2022 in the United States had nicotine content of 5% or higher.<sup>20</sup> The EU also limits the volume of eliquid, which continues to rise in products available in the United States and affects the total nicotine in each device. 21 For example, a typical device in Spain or France contains 2% nicotine by volume (20mg/mL or less) with a total volume of 2mL, resulting in total nicotine content of 40mg. In contrast, currently popular disposable devices in the United States (e.g., Elf Bar) often contain 5% nicotine (50mg/mL) with a total volume of 13mL, resulting in total nicotine content of 650mg—over 15 times higher than typical European devices. Dozens of countries prohibit the sale of e-cigarettes altogether, from Mexico to Thailand, Egypt and India.<sup>22</sup>

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7. Among youth who use e-cigarettes, 85% use flavored products. Fruit (69%), candy desert and other sweet flavors (38%) are most popular.<sup>23</sup> Flavors are known to increase the likelihood that youth will try vaping. <sup>24,24</sup> In contrast, only one in 20 youth who use e-cigarettes use tobacco-flavored products, compared to one in every four adults who use e-cigarettes. <sup>25</sup> Fruit and sweet flavors are associated with lower harm perception, while tobacco flavors (which are allowed for sale in NYC) were associated with increased harm perception. <sup>26</sup> In addition, flavors other than those found in combustible tobacco products increase the likelihood of sustained e-cigarette use. <sup>27,28</sup> Nearly half of adults, and most youth who use e-cigarettes did not previously smoke: 48% of adults that use e-cigarettes never previously smoked, and 28% are currently smoking while using e-cigarettes, <sup>29</sup> potentially increasing some health risks due to dual use of both products. <sup>30,31</sup>.

- The variations in e-cigarette devices and e-liquids used can also result in exposure 8. to varying chemicals in the aerosol including metals and related compounds from the devices or heating elements, including to chromium, nickel, cadmium, lead, and arsenic; the aerosol can also contain lipids, flavoring-related compounds (e.g., diacetyl, vanillin, etc.), carbonyls (e.g., formaldehyde and acrolein), volatile organic compounds, reactive oxygen species and free radicals, which can be generated by heating flavorings, solvents, and other additives. 32,33,34 <sup>35,36,37,38,39</sup> Some of these chemicals are known carcinogens, irritants, or are associated with other health issues. The heating process also generates new compounds from flavorings and solvents. Different compounds have different risks. 40
- 9. Although long-term risks of e-cigarette use are unknown, early data raises concerns especially given the wide range of chemical exposures from the aerosol generated by the devices. The typical solvents used in e-cigarettes are known to cause airways irritation and cough; limited longitudinal data raises concerns about e-cigarette use and development of additional respiratory

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symptoms, asthma, and COPD. 41,42,43 Other early studies suggest additional potential areas of concern, including for cardiovascular health, oral health, and immune system health, but data are very limited. 44,45,46,47, 48,49,50,51,52,53,54 The e-cigarette, or vaping, product use-associated lung injury (EVALI) outbreak that began in 2019 also highlighted other potential mechanisms for pulmonary toxicity and how much remains unknown about the health effects of vaping, both for nicotine and cannabis vaping products. 55,56 Risks from exposure to secondhand aerosol from e-cigarettes and vaping products are also unknown but are important to consider, given the aerosol constituents discussed above. Any long-term risks will be borne primarily by youth and young adults who used these products while their brains and pulmonary systems were still developing

MICHELLE MORSE, M.D.

Dated: May 21, 2024

Long Island City, New York

and use them chronically or long-term, facilitated by the devices' high nicotine content.

<sup>&</sup>lt;sup>1</sup> U.S. Department of Health and Human Services. E-cigarette use among youth and young adults. a report of the surgeon general, 2016. Available: <a href="https://e-cigarettes.surgeongeneral.gov/documents/2016">https://e-cigarettes.surgeongeneral.gov/documents/2016</a> SGR Full Report non- 508.pdf

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<sup>&</sup>lt;sup>3</sup> U.S. Department of Health and Human Services. E-cigarette use among youth and young adults. a report of the surgeon general, 2016. Available: <a href="https://e-cigarettes.surgeongeneral.gov/documents/2016">https://e-cigarettes.surgeongeneral.gov/documents/2016</a> SGR Full Report non- 508.pdf

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<sup>&</sup>lt;sup>5</sup> Centers for Disease Control and Prevention (CDC). 1991-2021 High School Youth Risk Behavior Survey Data. Available at http://yrbs-explorer.services.cdc.gov/. Accessed on May 7, 2024.

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